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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/826,886	04/15/2004	Richard David Taylor	MP2209-156672	1435

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EXAMINER
RILEY, MARCUS T

ART UNIT	PAPER NUMBER
2625	

MAIL DATE	DELIVERY MODE
11/10/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
	10/826,886	TAYLOR ET AL.
Office Action Summary	Examiner	Art Unit	
	MARCUS T. RILEY	2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>04 August 2009</u>.

2a)☐ This action is **FINAL.** 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-7</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-7</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>15 April 2004</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date <u>11/15/2006; 06/02/2009; 08/04/2009</u>.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Response to Amendment

1.   This office action is responsive to applicant's remarks received on August 04, 2009.

Claims 1-7 remain pending.

Response to Arguments

2.   Applicant's arguments with respect to claim 1-7 have been considered but are moot in

view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

4.   **Claim 1-3 & 6** are rejected under 35 U.S.C. 103(a) as being unpatentable over Amini

'538 et al (US 5,381,538 hereinafter, Amini '538) in combination with Mills et al. (US 5,696,917

hereinafter, Mills '917).

       Regarding claim 1; Amini '538 discloses a programmable interface comprising (Fig. 2,

Planar I/O interface circuit 112, i.e. Planar I/O interface circuit provides PIO programming information to and receives PIO

programming information from PIO registers 114. Column 7, lines 29-33):

a register file (Fig. 2, Register 104) having a plurality of registers (Fig. 2, 20 bytes of Register104),

each register having a type (i.e. FIFO of register 104, Column 6, lines 40-58);

a run control register (Fig. 2, PIO Registers #114, i.e. PIO registers 114 store program information which is used

during the operation of DMA controller 52. PIO registers include eight channels, corresponding to the eight channels of DMA

controller 52. Each channel stores control information for a corresponding channel of DMA controller 52. Column 7, lines 35-

40);

a Code Store SRAM (Fig. 1, SRAM #34), bidirectionally communicating with the

microcontroller (Fig. 1, Microprocessor #30) (i.e. SRAM #34 communicates with Microprocessor #30 as in Column 2,

line 56 –thru column 3, line 3. The communication is bidirectionally per Column 3, lines 19-25);

a microcontroller configured to bidirectionally communicate with the register file and the

run control register (i.e. Microprocessor #30 bidirectionally communicates DMA Controller 52 via bidirectional buffers 36

and 38. Because DMA Controller 52 includes register 104 & 114 as stated in Column 5, lines 35-45, the microcontroller

configured to bidirectionally communicate with the register file and the run control register. See also Column 3, lines 19-25 and

Column 2, line 56 thru column 3, line 3).

wherein the Code Store SRAM and the run control register bidirectionally communicates

with a system processor (Fig. 1, Processor #20 i.e. Column 3, lines 19-25).

Amini '538 does not expressly disclose an executable code, loaded onto the Code Store

RAM; wherein the system processor is configured to load the executable code onto the Code

Store SRAM; and further configured to signal the microcontroller, via the run control register, to

begin execution of one or more instructions included in the executable code.

Mills '917 discloses and executable code, loaded onto the Code Store RAM (i.e. The program

associated with the selected game will be loaded into SRAM 240. Column 10, lines 33-53);

wherein the system processor (Fig. 2, Static Microprocessor 210) is configured to load the

executable code onto the Code Store SRAM and further configured to signal the microcontroller,

via the run control register, to begin execution of one or more instructions included in the executable code (i.e. The program associated with the selected game will be loaded into SRAM 240 and programs executing from SRAM 240 can be accessed, and hence executed. Column 10, lines 33-53 and column 12, lines 11-16).

Amini '538 and Mills '917 are combinable because they are from same field of endeavor of communication systems (Mills '917 at *"Field of Invention"*).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the communication system as taught by Amini '538 by adding an executable code, loaded onto the Code Store RAM as taught by Mills '917. The motivation for doing so would have been because it advantageous to load the executable code in the SRAM to store the data so the data it will not be lost. Therefore, it would have been obvious to combine Amini '538 with Mills '917 to obtain the invention as specified in claim 1.

Regarding claim 4; Amini '538 discloses a device wherein the register type further includes FIFO registers, operative to communicate with a direct memory access controller (i.e. Fig. 2 is a schematic block diagram of a DMA Controller 52 that includes register FIFO 104 & 108. Column 5, lines 35-45).

Regarding claim 7; Amini '538 discloses a device (Fig. 1, Bidirectional Buffers 36 & 38), wherein the system processor is configured to bidirectionally communicate with the register file (i.e. Buffers 36, 38 are bidirectional and communicate with FIFO registers 104 in DMA. Column 3, lines 19-25 and Column 5, lines 35-45);

5.   **Claims 2, 3 & 6** are rejected under 35 U.S.C. 103(a) as being unpatentable over Amini '538 and Mills '917 as applied to claim 1 above, and further in view of Curry et al. (US 6,112,275 hereinafter, Curry '275).

Regarding claim 2; Amini '538 as modified does not expressly disclose a device wherein the types of the registers are selected from a group that includes timer, General purpose, external I/O, internal I/O, shared, and interrupt.

Curry '275 discloses a device wherein the types of the registers are selected from a group that includes timer, General purpose, external I/O, internal I/O, shared, and interrupt (Fig. 21, Register 2104 and Figures 22A-N. Column 36, lines 52-56).

Amini '538 and Curry '275 are combinable because they are from same field of endeavor of communication systems (Curry '275, See Title).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the communication system as taught by Amini '538 by adding the types of the registers as taught by Curry '275. The motivation for doing so would have been because it advantageous to provide several registers with higher functionality at lower cost in a more compact package. Therefore, it would have been obvious to combine Amini '538 with Curry '275 to obtain the invention as specified in claim 1.

Regarding claim 3; Curry '275 discloses a device wherein when one of the registers has a type of external I/O, the register including edge detect logic (i.e. Fig. 9A-9B shows the control logic used in the registers. Column 15, lines 64-67 thru column 16, lines 1-13).

Regarding claim 6; Curry '275 discloses a device wherein the executable code is selected from a group that includes serial interfaces, parallel interfaces, serial peripheral interface (SPI), Synchronous Serial Interface (SSI), MicroWire, Inter Integrated Circuit (I2C), control area network (CAN), UART, IEEE1284, LCD interface, front panel interface, and MODEM (i.e. The

programmable capabilities of the standard UART chip in the computer's RS232 interface are exploited to provide adaptation to the time base requirements of the module. Column 10, lines 18-28).

6.   **Claim 5** is rejected under 35 U.S.C. 103(a) as being unpatentable over Amini '538 and Mills '917 as applied to claim 1 above, and further in view of Ueda (US 5,631,637 hereinafter, Ueda '637).

Regarding claim 5; Amini '538 as modified does not expressly disclose a device wherein the executable code implements a laser printer mechanism communications interface and a vertical top-of-page synchronization interface.

Ueda '637 discloses a device wherein the executable code implements a laser printer mechanism communications interface and a vertical top-of-page synchronization interface (i.e. When the printing data of a page are developed in the bit map memory 17, the main control unit 18 sends a printing start signal 121 to a printing mechanism shown in Fig. 2. The printing mechanism is of so-called raster scanning type, such as a laser beam printer, and releases a horizontal synchronization (BD) signal 122 and a vertical synchronization signal 123 when the printing operation is enabled. Column 4, lines 7-14).

Amini '538 and Ueda '637 are combinable with because they are from same field of endeavor of communication systems (Ueda '637 at *"Field of Invention"*).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the communication system as taught by Amini '538 and Ueda '637 by adding a device wherein the executable code implements a laser printer mechanism communications interface and a vertical top-of-page synchronization interface as taught by Ueda '637. The motivation for doing so would have been because it advantageous data to be processed faster and more efficiently. Therefore, it would have been obvious to combine Amini '538 with Ueda '637 to obtain the invention as specified in claim 1.

Examiner Notes

7.   The Examiner cites particular columns and line numbers in the references as applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings in the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested that, in preparing responses, the applicant fully considers the references in its entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or as disclosed by the Examiner.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARCUS T. RILEY whose telephone number is (571)270-1581. The examiner can normally be reached on Monday - Friday, 7:30-5:00, est.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K. Moore can be reached on 571-272-7437. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

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system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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